```
% Fixed-Point Method for function F(x)=(sin(x)+cos(x))/2
clc;
clear all;

% Inputs: p0, tol, N0
tol = 1e-5;  % error tolerance
N0 = 500;    % maximum number of iteration
p0= 3/4;     % starting point

% Start Iterating
j = 1;
p = p0;
F = @(x) (sin(x)+cos(x))/2;

% This is a shorter way of writing:
%
% function output = F(x)
%     output = (sin(x)+cos(x))/2;
% end

while j < N0

  p = F(p);

  if abs(p-p0)<tol
      % close enough to actual root, stop
      break;
  else
      p0=p;
      j = j + 1;
  end

end

fprintf('Iteration number = %d \n', j);
fprintf('p = %.4f \n',p);
fprintf('F(p) = %.4f \n', p-2^(-p));
```